Trends and Ethnic Differentials of Fertility in Russia in Last Decades

Abstract

Over the past 35 years, Russia’s Central Statistical Office conducted 7 large-scaled interviewing of Russian women on the number of children born. The question about the number of ever-born children was asked in four general population censuses (1979, 1989, 2002, 2010) and three microcensuses (1985, 1994, 2015). After termination of collection and centralized processing of birth registration data by ethnicity in Russia, only censuses and sample surveys remain a source of information about the ethnic differentiation of fertility. The conclusions are: (1) the preservation of the historical downward trend of fertility for 32 of 34 nationalities based on the average number of children born by age 50; (2) the decline in fertility occurred most rapidly in recent decades among ethnic groups who were undergoing through an active phase of the First Demographic Transition; (3) the 2015 Microcensus shows the on-going reduction in ethnic differentiation in fertility in Russia for women in their forties and fifties; (4) the expected number of children declared in 2015 is lower for almost all nationalities and age groups and it’s ethnic differentiation is less pronounced than those declared twenty years before, in 1994.

At the same time it is quite possible that in some cultures the recent pronatalist demographic policy since 2006 intensified the youth stimulus to childbearing, especially in ethnic groups, which still have ideals and illustrative examples of large families. Also possible that the results of these changes still have to unfold, as generations get older, in the growth of indicators of their ultimate fertility. As a result, the issue of the demographic effectiveness of today’s pronatalist policy in Russia remains open not only for the general population, but also for certain ethnic groups living in Russia.
Trends and Ethnic Differentials of Fertility in Russia in Last Decades

The most ambitious seven surveys of women in Russia on the number of children born

Over the past 35 years, Russia’s Central Statistical Office (under different names) conducted 7 large-scaled interviewing of Russian women on the number of children born. The question about the number of ever-born children was asked in the framework of four general population censuses (1979, 1989, 2002, 2010) and three microcensuses (1985, 1994, 2015) conducted between the big censuses (Table 1).

With one exception, all of them were sample surveys, but their statistical representation was very high, given the large share of the population sampled. Only the 2010 Census asked all adult women in the country the question about children. Perhaps, to compensate for this the extravagant 2015 Microcensus covered only 1.5% of the population (Table 1).

Table 1. The most representative population surveys in Russia when women were asked about the number of live children ever born

<table>
<thead>
<tr>
<th>No. of Survey</th>
<th>Official name of Survey</th>
<th>Sample size</th>
<th>Date of Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All-Union 1979 Population Census</td>
<td>25%</td>
<td>17 January 1979</td>
</tr>
<tr>
<td>2</td>
<td>All-Union 1985 Socio-demographic Sample Survey of Population</td>
<td>5%</td>
<td>2 January 1985</td>
</tr>
<tr>
<td>3</td>
<td>All-Union 1989 Population Census</td>
<td>25%</td>
<td>19 января 1989</td>
</tr>
<tr>
<td>4</td>
<td>1994 Socio-Demographic Sample Survey (Microcensus)</td>
<td>5%</td>
<td>14 February 1994</td>
</tr>
<tr>
<td>5</td>
<td>All-Russia 2002 Population Census</td>
<td>25%</td>
<td>9 October 2002</td>
</tr>
<tr>
<td>6</td>
<td>All-Russia 2010 Population Census</td>
<td>100%</td>
<td>14 October 2010</td>
</tr>
<tr>
<td>7</td>
<td>2015 Socio-Demographic Survey (Microcensus)</td>
<td>1.5%</td>
<td>1 October 2015</td>
</tr>
</tbody>
</table>

In all surveys the question on number of children born was formulated about the same and it addresses all live births, including those who have died by the time of the survey, but doesn’t touch stillbirths.

It should be noted that in all the surveys some social groups were not purposefully covered, namely persons who are in prisons, those living in homes for the elderly and disabled, in hospitals for chronically ill and in long-time care, barracks, convents, etc., that is those people were excluded, who did not live in private households (a so-called “institutional population”). The surveys also did not cover the population living in the special sites closed for or with limited access to general public (dozens of military and military-industrial cities and towns all over the country), as well as the populations of some remote northern and mountainous areas. Totally

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about 5% of Russia’s population was purposefully excluded from the sample. In addition, the microcensus in 1994 was not carried out in Chechnya, and an additional population of the Republic of Crimea and Sevastopol was included in 2015. With regard to the possible impact of the Crimea female responses on the overall results of the country we can say that it is not noticeable. For example, calculations show that with the exclusion of women of Crimea, the national average number of children born per woman aged 35 years and above would be higher, but only 0,001-0,002.

The general trend of changes in the average number of ever born children in Russia by age of women in all seven surveys.

Figure 1 presents the estimates of the average number of children born per woman, representing the age group of 18 to 60 years.

![Figure 1](image)

**Figure 1. Average number of children ever born alive per a woman by age group from 18 to 60 according to 7 Surveys, conducted in 1979-2015, Russia.**

As can be seen, the number of children born has a generally downward trend, particularly evident for women in older age groups (over 30 years). On the average number of children born to older age groups should be paid special attention, since the cumulative births for them is close to the actual value of total fertility for the whole childbearing period, which, strictly speaking, gives an exhaustive answer to the main question of the level of fertility in the country.

Thus, the indicators based on the results of the 2015 survey for all age groups, including young people, are below the results of the survey in 2002 - is an obvious decrease in the birth rate for thirteen years separating the two measuring points. For women older than 40 years the survey results in 2015 are also below the results of the survey conducted in 2010. The results of 2015 in comparison with 2010 show a slightly higher cumulative fertility only at a young age up to 35 years (although this unobtrusive positive shift barely extends beyond the boundaries of statistical error).

Figure 1 also reminds us that in the second half of the 1980s, Russia has had to deal with an increase in fertility rates in younger age groups (especially remarkable in ages under 25), which was much more important than we can see in the results of the survey in 2015, and which, however, then has not resulted in an increase in total cohort fertility.
For greater clarity of fertility changes that have taken place in Russia over three and a half decades, we present a graph (Figure 2), which shows the curves of the average number of children born per woman for every five-year age group older than 30 years for all seven polls and these figures are on the exact dates of the surveys, deferred on a scale of calendar time (abscissa of the figure).

Figure 2. Average number of children ever born alive per woman in ages 30-34, 35-39, 40-44, 45-49, 50-54 и 55-59 years according to 7 Surveys, conducted in 1979-2015, Russia.

Overall long-term downward trend is obvious, although the rapid decline periods alternate with periods of relative stability. After the 2002 census, fertility in Russia fell by 2015, and it was characterized by a fairly rapid drop for some age groups. You can also state that the reduction in total fertility from generation to generation has slowed down in the past five years and recorded even subtle encouraging signs of stabilization, as far as can be judged by the results of cumulative fertility of 30 years old women.

Stimulating population policy measures, which were adopted in 2006 and subsequently, as is well known, led to increase in period total fertility rate (conventional indicator that are heatedly commented by experts and politicians with a clearly positive accent), but the impact on the ultimate number of children born to woman is still very low.

This also can be seen by looking at Figure 3, with each panel presenting women distribution by number of children born in all seven surveys at ages 30-34, 35-39, 40-44, 45-49.

For the age of 30-34 years, the Microcensus 2015 recorded a barely noticeable increase in the proportion of women with 2 or 3 children compared with the census of 2010 and with 3 children also in comparison with the 2002 census. At the age of 35-39 years, there is only a weak
increase in the share of women with three children in comparison with the census of 2010 (compared to the 2002 census, and all the previous dates, there is a decrease).

For women aged 40 years who have completed or are close to completing their reproductive career, the Microcensus 2015 has not recorded encouraging trends - the proportion of mothers with two or more children has declined in the last decade.

One cannot but draw attention to ongoing, since the early 2000s, growth in the proportion of childless among thirty- and forty-year women, which, in fact, not only offsets a barely noticeable increase in women with two or three children, but calls into question the future prospects of the fertility level in Russia.

Finally, it should be noted that the widespread opinion about a marked increase in the true mothers of many children in Russia, say, women with four, five or more children is not confirmed by the most large-scale surveys carried out in the country (Figure 3). Moreover the average number of children to mothers who gave birth to five or more children continued a long-term historical trend and seriously declined over the past decade, that is, during the period of stimulating population policy measures.

Figure 3. Distribution of women by number of children ever born alive in ages 30-34, 35-39, 40-44, 45-49, 50-54 и 55-59 years according to 7 Surveys, conducted in 1979-2015, Russia, percentage.

Inter-ethnic differences in fertility in Russia: long-term trends

After practical termination of collection and centralized statistical development of birth registration data by ethnic and national group in Russia, only censuses and sample surveys of the population remain a source of information about the ethnic differentiation of fertility in the

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2 Since 1997, the record of ethnicity was excluded from the personalized identification documents in Russia and its regions, it is no longer compulsory to indicate in the acts of civil status (births, deaths, marriages, divorces), and it is only filled upon the applicant's request. As a result, the proportion of acts with unspecified ethnicity critically increased (by 2006 almost half). In 2007, official development of vital statistics in the context of nationalities has been discontinued.
country. Given that in Russia live many peoples who keep significant differences from the Russian majority in regard to marriage and family, reproductive behavior, and sometimes in the trends of their changes, maintaining a regular monitoring of fertility trends based on large-scale population surveys, an example of which is the microcensus of the population in 2015, is of exceptional importance.

Unfortunately, the corrective procedure taking into account the peculiarities of the microcensus 2015 sample territorial design which was conducted in relation to all Russians (not presented in this paper), does not apply to the results of the distribution of women by age and number of children born in the context of nationality because the estimates of the distribution of the total population of women by age and nationality in the territories for 2015 are not known. Because of this, we have to base our analysis on coarser raw data, which, as have been shown in other our work (Andreev and Zakharov, 2017), are somewhat biased to the higher fertility level in the country (by 0.06-0.07 births per woman for different age groups).

In Figure 4 and Table 4, we present the average number of children born to women aged 50-54 years for certain nationalities for which comparisons can be made for the period of 35 years based on 5 surveys conducted in the framework of the national population census in 1979, 1989, 2002, and 2010, and the microcensus 2015. It is obvious that the estimate of cumulative fertility to this age is an indicator of total fertility of generations who completed their childbearing by the time of the surveys.

The first conclusion, which seems obvious, concerns the preservation of the historical downward trend of fertility in Russia for 32 of the 34 nationalities, which were included in the data processing of the surveys’ results. The exception was Armenian women showing stagnation at the same level for three decades, and Jewish women who have a slight increase in fertility in the 2000s. Armenian women even moved upward from the last quartile of the distribution of nationalities in the level of fertility to the penultimate, but fertility of Jewish women is still the lowest of the nationalities included in the table.

The second important conclusion is that the decline in fertility occurred most rapidly in recent decades among those ethnic groups who were undergoing through an active phase of the First Demographic Transition - the transition to fertility, controlled at the individual and intrafamily level. This primarily refers to the peoples living in the North Caucasus, in Kalmykia, Siberia and the Far East, as well as the Kazakhs and, to a lesser extent, to the peoples of the Volga region.

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It is obvious that, despite the statistically significant presence in the all-Russian population of ethnic groups who still have much higher birth rate than the Russian people, the overall long-term trend of fertility change in the whole population of Russia continues to be determined by the Russian majority, as well as the ethnic groups close to the Russians with regards to demographic behaviors (Ukrainians, Belarusians).

Moreover, the contribution of the nationalities with fertility, significantly higher than the average level greatly decreased over the last decade, which, in particular, is pointed to by a reduction of the difference between the average number of children born for all women in the age 50-54 in Russia and the value of this indicator for the Russian women. While in the survey in 1979, a Russian woman in that age had 2.10 births, and an ‘average’ woman in Russia - 2.23, in 2010, respectively, 1.78 and 1.86, and in 2015 of - 1.71 and 1.79 (Table 4.).

Table 4. Average number of children ever born alive per 1000 women of selected nationalities in age of 50-54 years according to surveys conducted in 1979, 1989, 2002, 2010 и 2015.

<table>
<thead>
<tr>
<th>Nationality*</th>
<th>1979</th>
<th>1989</th>
<th>2002</th>
<th>2010</th>
<th>2015</th>
<th>Population size in 2010**</th>
<th>Per cent of Russia’s population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>2232</td>
<td>2042</td>
<td>1845</td>
<td>1859</td>
<td>1792</td>
<td>142856.5</td>
<td>100</td>
</tr>
<tr>
<td>Russians</td>
<td>2098</td>
<td>1877</td>
<td>1770</td>
<td>1783</td>
<td>1714</td>
<td>111016.9</td>
<td>77.71</td>
</tr>
<tr>
<td>Ingush</td>
<td>5296</td>
<td>6358</td>
<td>4439</td>
<td>3553</td>
<td>3132</td>
<td>444.8</td>
<td>0.31</td>
</tr>
<tr>
<td>Romany</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3467</td>
<td>3097</td>
<td>205.0</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Reduction of inter-ethnic differences during the three and a half decades can be clearly seen in Figure 5, which shows how many times more or less for different years was an average birth rate among the representatives of a people in relation to Russian women.

If in the 1970s and the 1980s, fertility levels of some peoples (for example, the Ingush, Chechens, Avars, Lezgins, Dargin, Tuvan, Kalmyks, Kazakhs) exceeded indicators for the Russian to 2.5-3 times, then no ethnic groups were left by 2010 for which the total fertility of generations is more than 2 times higher than the figures for the Russian majority.

The 2015 Microcensus results show the on-going process of reducing ethnic differentiation in the birth rate in Russia. At least, if you judge it based on the final fertility rate for women in their fifties (the conclusion about the reduction in the relative variation between the surveys of 2010 and 2015 is also supported for women 45-49 years old, for which comparison results are not presented here).
Figure 5. Ratio of the number of children ever born to women aged 50-54 years of selected nationalities to that for Russians according to the surveys conducted in 1979, 1989, 2002, 2010 and 2015.

Note: Nationalities are listed in descending order by average number of children born to a woman aged 50-54 according to the 2015 Survey.


The programs of 1985, 1994 and 2015 sample surveys allows not only to study differences in the actual characteristics of childbearing, but also differences in intentions regarding childbearing based on indicators such as the expected and desired number of children. The question of the expected number of children is of interest to the researcher, first of all, because the answers to it can be successfully used to construct predictive scenarios of the change in fertility level (Darsky, Bondarskaya 1995, Andreev, Bondasrskaya 2000, Andreev, Kharkova 2013).4

Consider the results of surveys of women with respect to the expected number of children carried out in 1994 and 2015. In both surveys, the question was asked in almost identical form: 1994 - "How many children are you going you to have (including those available)?" 2015 - "How many children, including those available, are you going to have?". Over the past two decades, between the surveys, the average expected number of children has declined significantly in almost all nationalities in the main age groups 25-29, 30-34, 35-39 and 40-44 years (an average of 0.3 births per woman, while the Yakuts and Ingush even for 1 birth). Rare exceptions are the Karachais, Adygeis, Kalmyks and Buryats, whose average expected number of children at the age of 25-29 years increased, by 0.21, 0.04, 0.04 and 0.03 births per woman (Figure 5). As a rule, the higher the expected number of children was in 1994, the greater was its decline in subsequent years, and as a result differences between ethnic groups, on average, decreased.

We can compare the expected number of children recorded in 1994 in women of individual cohorts, with the number of children that these cohorts actually gave birth to by the survey date in 2015, i.e. twenty years later. Figure 6 shows the difference between the average expected number of children in 1994 and the average number of children born, according to respondents' reports in 2015. As for the vast majority of nationalities the difference is in the zone of positive values, this means not full implementation of intentions at the mass level. It should be noted that the higher the expectations were in 1994, the lower the implementation of these intentions was.

At the same time, women from the cohort of 1965-1969, who were 25-29 years old in 1994, representing the Mordva, Mari, Tatars, Bashkirs, Karelians, Udmurtians, Ossetians, Kalmyks, Altaians, Buryats, Tuvinians, gave birth to a few more children than expected, from 0.01 births per woman in Khakass and Altaians, to 0.2 births in Mari and Karelians.

The overwhelming majority of the Russian population has a good birth control and, at an average level, the deviations of actual behavior from intentions are small enough, which is especially characteristic for Russians and for the urban population in general. We have yet once again the empirical confirmation of the well known fact, which allows us to support those Russian colleagues who believe that the results of answers to questions about the expected number of children can be considered satisfactory predictors of future fertility, at least for a perspective of twenty years. On the other hand, we must bear in mind that the demographic transition to a controlled low fertility has not yet fully come to an end in a number of North Caucasian and Siberian national minorities, which manifests itself not only in higher completed
fertility rates, but also in that, following traditional beliefs, they declare overestimated expectations of the results of their reproductive behavior.

Figure 6. Deviation of average numbers of children ever born declared in 2015 from expected numbers of children declared in 1994 for the 1955-1959, 1960-1964, 1965-1969 birth cohorts of women

Note: Nationalities are listed in ascending order by the average number of expected children to a woman aged 30-34 according to the 1994 Survey.

How the pronatalist population policy affected fertility levels among the different peoples

Let us look in more detail at the comparisons of the results of the last three surveys of women in different age groups in the context of nationalities, conducted in the framework of the 2002, 2010 censuses and the microcensus 2015 to raise the question about the possible impact of state demographic policy implemented after 2006 and aimed at fertility incentives with financial, outreach and propaganda tools.

Figure 6 shows the relative change in the number of children born to women 45-49 years old. We can see the confirmation of our conclusion that we have reached above, regarding the preservation of the decreasing tendency in fertility from generation to generation, characteristic of all peoples living in Russia. With the exception of Tajiks whose family migration has increased in Russia, all the ethnic groups in 2015 showed a lower birth rate, not only in comparison with 2002, but in comparison with 2010 (the birth rate declared by the Tatars and Kazakhs in 2015 remained at the level of 2010).

As the age of women decreases we can observe a clearly apparent increase in cumulative fertility rates in 2015 compared with the previous two surveys (Fig. 7-9). And the upward trend is practically not related to the current level of fertility, characteristic of a particular nationality

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(the figures show nationalities in descending order of the average number of children born based on the results of the survey in 2015). Thus, the relative changes in the number of children born to women of Russian ethnicity in the last decade are close to the average values for all other ethnic groups, including those that have substantially higher than ethnic Russians, the level of fertility. Looking at this pattern of change one is tempted to think that this effect has been caused by the demographic policy measures, unidirectional and uniform in terms of content and timing of their introduction. Among 30-34-year old women the effect is stronger than in the 35-39-year-olds, and the latter is stronger than that of 40-44 year old women. In the age group 30-34 years, the average number of children born in the survey of 2015 was even higher than in 2002 for a great number of ethnic groups (but not all, and the Russians, in particular, do not refer to them!).

It should also be noted that there was an increase, although not significant, between 2015 and 2010 surveys of ethnic differentiation in the number of children born to women younger than 45 years. Moreover, the younger is the women, the stronger is the relative variation in rates among different ethnic groups. This can be interpreted as an unequal in strength response to pronatalist policies shown by different Russian regions and the peoples who inhabit them. The increase in regional differentiation in fertility over the past decade, especially strong in rural habitats, we have already noted in other studies. Russia has already experienced a similar situation of the growing inter-ethnic differences in fertility in the 1980s, also in a situation of strengthening of the state policy in relation to the family (see. Fig. 5). It is not excluded that the current population policy, at least for a time, again slowed the unification process in fertility levels and in the age pattern of fertility of the Russia’s population.

Would the above-noted facts mean that we can expect an increase in completed fertility rates in today’s generations of thirty-year women, when they get out of child-bearing age (ie have reached 50 years), compared with previous generations? Only in this case we could speak about the turn of the historical trend of lower birth rates among the peoples of Russia and about the positive results of the ongoing demographic policy, in particular.

Today we are not ready to give an affirmative answer to these fundamental questions. We can yet only note the obvious and fairly synchronous, but not identical in magnitude changes in the timing of births in the majority of ethnic groups of Russia in the direction of greater concentration of births in thirty-year women. It is possible that as the representatives of these generations will live the fourth decade of their life, many of them may face a compensatory drop in childbearing activity as a result of increased fertility in earlier ages. In this regard, we can note, based on the results of the surveys, that the cohorts, who were 30-35 years old at the start of government programs to stimulate the birth rate (2006-2007.) showed no significant increase in completed fertility by the age 40-45 years (ie, in fact, by the end of their reproductive career) in the vast majority of the peoples of Russia. At the same time it is quite possible that in some cultures the demographic policy, in fact, intensified the youth stimulus to childbearing, especially in ethnic groups, which still have ideals and illustrative examples of large families, while social identity of the adult man and woman retains the traditional offset towards the creation of numerous offspring. It is also possible that the results of these changes still have to unfold, as generations get older, in the growth of indicators of their ultimate fertility. As a result, the issue of the demographic effectiveness of today’s pro-natalist policy in Russia remains open not only for the general population, but also for certain ethnic groups living in Russia. We hope that the results of a population survey on the number of children born, which is included in the program of the population census in 2020, will help to judge with greater confidence about the direction of the trend in fertility among various ethnic groups and the general population.
Figure 6. Relative changes in the average number of children ever born to women aged 45-49 years of selected nationalities between the surveys of 2002 and 2010, of 2010 and 2015, and between the surveys of 2002 and 2015.

Note: Nationalities are listed in descending order by average number of children born to a woman aged 45-49 according to the 2015 Survey.

Figure 7. Relative changes in the average number of children ever born to women aged 40-44 years of selected nationalities between the surveys of 2002 and 2010, of 2010 and 2015, and between the surveys of 2002 and 2015.

Note: Nationalities are listed in descending order by average number of children born to a woman aged 40-44 according to the 2015 Survey.
**Conclusions and discussions**

There are grounds for arguing that:
- the historical downward trend of fertility for 32 of 34 nationalities is still valid;
- the fertility decline occurred most rapidly among ethnic groups who were undergoing through an active phase of the First Demographic Transition;
- there is the on-going reduction in ethnic differentiation in fertility in Russia for women in their forties and fifties (completed cohort fertility);
- there was an increase, although not significant, between 2015 and 2010 surveys of ethnic differentiation in the number of children born to women younger than 45 years;
the younger is the women, the stronger is the relative variation in rates among different ethnic groups

Russia has already experienced a similar situation of the growing inter-ethnic differences in fertility in the 1980s, also in a situation of strengthening of the state family policy;

quantum fertility intentions declared in 2015 are lower than those declared in 1994 for almost all nationalities and all age groups of women. Ethnic variation in average expected number of children is also lower in 2015;

the higher fertility intentions as measured for nationalities in 1994 the less strictly women realized them in actual fertility behavior of the next 20-year perspective.

The incomplete First Demographic Transition in some ethnic groups in Russia could explain the latter finding.

It is not excluded that the current population policy, at least for a time, again slowed the unification process in fertility levels and in the age pattern of fertility of the Russia's population: In recent years, the process of increasing age of motherhood braked sharply and is likely that the mother's age at birth of second and subsequent children started to decline. There is no doubt that the pronatalist policy accelerates the appearance of a second child in the family and has fueled a third and subsequent children in certain social strata and in some ethnic groups which still have ideals and illustrative examples of large families. At the same time it is very likely that the results of these changes will not be stronger, as generations get older, and we will not see any growth in their ultimate fertility.

Key question arise: Does Demographic Modernization in Russia make one step back?

Pronatalist policy has a positive response first of all among the social and ethno-demographic groups that either have not yet forgotten the historical experience of high fertility, or for whatever reasons (religious, in particular) continue to be guided by the ideals of a large family. In the long run we can hardly rely on a such mechanism for increasing or maintaining the birth rate in the country. Strengthening the demographic heterogeneity of the regions, social and ethnic groups has more negative than positive points. It is well known that the growing confrontation between the poor regions with high fertility and rich regions with low birth rates is always a great challenge for society and the economy.